

CLAIMS

1. (CURRENTLY AMENDED) A beam on demand system comprising:

at least one radio;

a plurality of amplifiers each having an input switchably coupled [to] with the at least one radio [via] by means of a [switch] Butler matrix and [to] with at least one beam former, [where] each amplifier [has] having at least one output coupled to an antenna array; and

a controller for [configured to] receiving[e] an output transmission power level signal from each of the plurality of amplifiers, [and] wherein the controller generates a control signal to the [switch] Butler matrix [causing the switch matrix to] for coupling[e] or uncoupling[e] an amplifier to the at least one radio, [where] the control signal [is] being based on the received output transmission power level of the amplifier and a threshold transmission power.

2. (ORIGINAL) The beam on demand system of claim 1 where the controller couples or uncouples an amplifier from the at least one radio based on whether the received transmission power of the amplifier is above or below the threshold transmission power.

3. (ORIGINAL) The beam on demand system of claim 1 where the amplifier and a corresponding antenna element of the antenna array are coupled or uncoupled to or from the at least one radio.

4. (ORIGINAL) The beam on demand system of claim 1 where the control signal is based on the transmission power level of a group of which the amplifier is a member and a threshold transmission power level established for the group.
5. (CURRENTLY AMENDED) The beam on demand system of claim 1 where the control signal is based on the transmission power level of the amplifier and a threshold transmission power established for the amplifier.
6. (ORIGINAL) The beam on demand system of claim 1 where the threshold is calculated by the controller and the threshold is based on the total average transmission power of a set of amplifiers from the plurality of amplifiers.
7. (CURRENTLY AMENDED) The beam on demand system of claim 1 where the at least one radio is switchably coupled [to] with a set of amplifiers from the plurality of amplifiers and an amplifier is either removed from the set or added to the set based on the threshold transmission power of the set and the transmission power of the amplifier to be added or removed.
8. (ORIGINAL) The beam on demand system of claim 1 where the controller is a Digital Signal Processor.
9. (ORIGINAL) The beam on demand system of claim 1 where each amplifier output is coupled to an antenna element of the antenna array.

10. (CURRENTLY AMENDED) The beam on demand system of claim 1 where the [switch] Butler matrix has N inputs and M outputs where N and M are integers equal to 1 or greater and M is greater than N.

11. (CURRENTLY AMENDED) The beam on demand system of claim 1 where [such a] the system serves a cell that is part of a wireless communication system.

12. (CURRENTLY AMENDED) A method for automatically allocating system equipment of a communication system, the method comprising the steps of:

providing equipment [so as] to serve various portions of the communication system;

monitoring the equipment to determine capacity demands of the various portions;
and

switching equipment between portions of the communication system using a Butler matrix to meet the capacity demands of the various portions.

13. (ORIGINAL) The method of claim 12 where the step of monitoring equipment further comprises establishing capacity thresholds for the various portions of the communication system.

14. (ORIGINAL) The method of claim 12 where the step of monitoring equipment further comprises establishing a capacity threshold for each of the provided equipment.

15. (ORIGINAL) The method of claim 12 where the step of switching equipment between portions of the communication system comprises automatically transferring a provided equipment from one portion to another portion to meet the capacity demands of one or both of the portions.

16. (ORIGINAL) The method of claim 12 where the step of switching equipment between portions of the communication system further comprises the steps of:

determining the capacity demand of the portion of the communication system to which equipment is switched; and

switching the equipment to the portion when the capacity demand of the portion is calculated to be below an established capacity threshold even after the equipment has been switched.

17. (CURRENTLY AMENDED) The method of claim 12 where the equipment being switched are amplifiers coupled to antenna elements of an antenna array and the amplifiers are switchably coupled [to] with at least one radio [via] by means of beam formers and [a switch] the Butler matrix, wherein the capacity demands are represented by transmission power levels of the amplifiers and the various portions are sectors and/or sub-sectors of a cell of a wireless communication system.